2-D PROJECTILE TRAJECTORY CORRECTION SYSTEM AND METHOD

ABSTRACT OF THE INVENTION

A 2-D correction system uses intermittent deployment of aerodynamic surfaces to control a spin or fin stabilized projectile in flight; correcting both crossrange and downrange impact errors. Intermittent surface deployment develops rotational moments, which create body lift that nudge the projectile in two-dimensions to correct the projectile in its ballistic trajectory. In low spin rate projectiles ("fin stabilized"), the rotational moment directly produces the body lift that moves the projectile. In high spin rate projectiles ("spin stabilized"), the rotational moment creates a much larger orthogonal precession that in turn produces the body lift that moves the projectile. The aerodynamic surfaces are suitably deployed over multiple partial roll cycles at precise on (deployed) and off (stowed) positions in the cycle to nudge the projectile up or down range or left or right cross range until the desired ballistic trajectory is restored.